

**Remarks**

Claims 1-11, 16, 17, 19, 21-32, 34-37, 44-76 and 85-88 are pending in the application.

**Elections/Restrictions**

The Examiner requires the cancellation of nonelected claims.

However, the Examiner is respectfully reminded that the nonelected claims were to nonelected species.

As stated by the Examiner in the Office Action mailed September 8, 2005 (page 3):

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141....

Accordingly, the pendency of the nonelected claims is proper and such claims will remain as pending in this application.

**Rejection of Claims under 35 USC § 102(e)/103(a) (Mitchell)**

The Examiner maintains the rejection of Claims 1 and 85 under Section 102(e) as anticipated by USP 6,602,740 (Mitchell), and Claims 3-8 as obvious under Section 103(a) over Mitchell. These rejections are respectfully traversed.

In response to Applicant's arguments, the Examiner stated as follows (Page 8; emphasis added):

...Applicant's further allege that the claims of the present invention do not recite "integrally molded" which is what Mitchell teaches. The examiner acknowledges that the claims at the present do not explicitly state the stiffeners being integrally molded. However, the molded stiffeners of Mitchell can not be excluded because the stiffeners are integrally molded. In fact, applicant's specification, page 10, lines 19-20, also teaches the stiffeners being integrally molded. The examiner merely includes additional limitation in the Office Action to anticipate any future claims' limitation. In short, Mitchell meets all of the limitations as claimed.

First of all, the Examiner admitted that Mitchell does not meet all of the limitations of the claims – but maintains the rejection based on Mitchell in anticipation of a future amendment to the claims.

Without addressing the Examiner's statement regarding Applicant's disclosure, Applicant submits that the Examiner's reference to *a future limitation* in the claims is in error and irrelevant to the present rejection and the claims presently under consideration.

Both of Claims 1 and 85 were *previously* amended to recite the feature of:

*a plurality of* molded plastic stiffener components (*stiffeners*) secured to the substrate.

Claims 1 and 85 are as follows (emphasis added):

1. A semiconductor device comprising:

a substrate; and

*a plurality of* molded plastic stiffener components secured to the substrate without attachment with an adhesive element, the stiffener components effective to increase rigidity of the substrate.

85. A semiconductor device comprising:

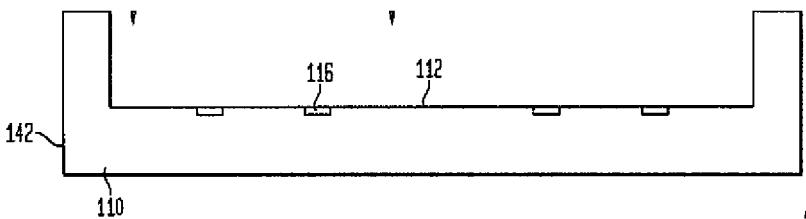
*a plurality of* molded plastic stiffeners secured to a substrate without attachment with an adhesive element.

The Examiner cited to element 142 (dam) in **Fig. 5** of Mitchell as teaching *a plurality* of molded plastic stiffener components, stating as follows (Office Action at Page 2, emphasis added):

As to claims 1, 85, Mitchell discloses a substrate 110 (fig. 5); *and a plurality* *molded plastic stiffener components* 142 (fig. 5, col. 3, lines 50-61; col. 9, lines 29-30) secured to the substrate....

The Examiner's interpretation of Mitchell is in *error*.

**Fig. 5** of Mitchell illustrates a *single* dam 142 integrally molded with substrate 110 – *not* a *plurality* of elements 142.



**FIG. 5**

At col. 3, lines 50-61 and col. 9, lines 29-30 – Mitchell describes a *single* dam 142 on substrate 110 – *not* a *plurality* of dams 142 (emphasis added):

A *dam* is preferably provided atop the first surface of the substrate and desirably surrounds the one or more microelectronic assemblies secured to the substrate. The dam may be a separate structure that is adhered to the top surface of the substrate. The dam may also be formed atop the substrate by dispensing a material into a mold or frame positioned atop the

substrate and then curing the material dispensed into the mold to form the dam. The dam may also be integrally formed with the substrate, whereby the substrate and the dam are a single piece. The dam preferably includes any material capable of retaining a curable liquid encapsulant within a bounded area atop a substrate or circuit board until the liquid material can be cured into a solid. In highly preferred embodiments, the dam preferably includes an epoxy material. The curable liquid encapsulant is preferably cured using heat or light.

...  
FIG. 5 shows still another preferred embodiment of the present invention whereby dam 142 is integrally molded with substrate 110. In FIG. 5, dam 142 is formed at the outer perimeter of substrate 110, however, dam 142 may also be formed around only a portion of substrate 110. ...

Mitchell does not describe a plurality of stiffener components.

It is well established that, to constitute anticipation under Section 102, each and every element of a claimed invention must be found in a single reference. *Hybridism Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 USPQ 81 (Fed. Cir. 1986); *Dalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 771, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 104 S.Ct. 1284, 224 USPQ 520 (1984); *In re Marshall*, 578 F.2d 301, 198 USPQ 344 (CCPA 1978).

Moreover, it is incumbent upon the Examiner to identify wherein each and every facet of the claimed invention is disclosed in the applied reference. *Lindemann Maschinenfabrik GmbH v. American Hoist and Derrick*, 730 F.2d 1452, 221 USPQ 481 (Fed. Cir. 1984).

The Examiner's Section 102 anticipation rejection is not consistent with this rule.

Mitchell does not describe a plurality of stiffener components. Nor is there any suggestion in Mitchell of a plurality of stiffener components.

Mitchell does not teach or suggest Applicant's device as claimed. Accordingly, withdrawal of this rejection is respectfully requested.

#### **Rejection of Claims Under 35 USC § 103(a) (Mitchell with Lim)**

The Examiner maintained the rejection of Claims 2-8, 11, 37 and 85 as obvious over the Mitchell in view of USP 6,020,221 (Lim). This rejection is respectfully traversed.

The Examiner asserts that it would be obvious to modify Mitchell's device with the various materials taught by Lim.

The claims at issue recite a device defining a *plurality* of stiffener components secured to a substrate without adhesive attachment.

For the reasons stated above with regard to Mitchell's failure to disclose the recited elements of the claims, the proposed modification of Mitchell's device with Lim's materials would not result in Applicant's devices as claimed.

Mitchell, either alone or combined with Lim, does not teach or suggest Applicant's devices as claimed. Accordingly, withdrawal of this rejection is respectfully requested.

**Rejection of Claims under 35 USC § 103(a) (Mitchell with APA, Culnane)**

The Examiner maintained the rejection of Claims 9-11, 16-17, 23-24, 28, 34-35, 44-46, 48-49, 55-58, 60, and 62-76 as obvious over Mitchell in view of "Admitted Prior Art" (APA), citing to Applicant's Figures 1-2 and the specification at pages 1-2.

The Examiner also rejected method Claim 47 as obvious over the Mitchell in view of APA, further in view of USP 6,517,662 (Culnane), citing to Culnane at col. 6, lines 34-50 and Figure 1.

These rejections are respectfully traversed.

The Examiner maintains that it would be obvious to modify Mitchell by (a) using a thermoplastic or thermosetting polymeric material as taught by APA to form the "stiffener" (dam) 142, among other features citing to APA in Fig. 1, and (b) bonding the stiffener by heating, cooling, and curing as taught by Culnane.

The claims at issue recite a device defining a *plurality* of stiffener components secured to a substrate without adhesive attachment.

For the reasons stated above with regard to Mitchell's failure to disclose the recited elements of the claims, the proposed modification of Mitchell's device with either the APA or Culnane's disclosure would not result in Applicant's devices as claimed.

Accordingly, withdrawal of this rejection of the claims is respectfully requested.

**Extension of Term.** The proceedings herein are for a patent application and the provisions of 37 CFR § 1.136 apply. Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that Applicant has

inadvertently overlooked the need for a petition for extension of time. If any extension and/or fee are required, please charge Account No. 23-2053.

It is respectfully submitted that the claims are in condition for allowance and notification to that effect is earnestly solicited.

Respectfully submitted,



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